REMARKS

In response to the Office Action mailed April 1, 2003, Applicants respectfully request reconsideration. To further the prosecution of this application, amendments have been made to the claims, and the claims as presented are believed to be in allowable condition.

Claims 1-85 are pending in this application. Claims 62, 63, 65, 68, 69, 74, 75, 77, 80, 81, and 83 have been amended herein.

Claims 1-61 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,041,345 to Chen et al. (Chen) in view of U.S. Patent No. 6,157,378 to Bormann et al (Bormann) and U.S. Patent No. 5,768,552 to Jacoby (Jacoby). Claims 62-85 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Chen in view of IBM Technical Disclosure Bulletin (TDB) No. NB9203306 (IBM TDB). These rejections are respectfully traversed.

Telephone Interview With Examiner Dinh

Initially, the undersigned appreciates the courtesies extended to him by Examiner Dinh during the telephone interview of May 12, 2003. The substance of this interview is summarized below.

During the telephone interview, the rejection of claims 1-61 under 35 U.S.C. §103(a) over Chen in view of Bormann and Jacoby was discussed. The undersigned noted that the rejection of claim 1 (and presumably also claim 37) appeared to be based on the combination of only two references (Chen and Bormann), rather than the three references (Chen, Bormann, and Jacoby) as indicated at page 2 of the Office Action. Examiner Dinh clarified that the rejection of independent claims 1 and 37 was based upon the combination of Chen and Bormann, while others of the dependent claims were rejected over the combination of Chen and Bormann in further view of Jacoby. The undersigned indicated that this response would be based upon the rejection as clarified during this brief interview.

Claim Rejections Under 35 U.S.C. §103(a)

1. Claims 1-61

With respect to claims 1-61, the Office Action asserts that Chen teaches "a storage system that is assessble [sic] by a plurality of users over a network," and that "each user has

access to [a] different portion of data on the storage device," citing column 5, lines 5-30. The Office Action concedes that Chen does not teach "a graphical user interface for [sic] administer the privileges and system that logged in." However, the Office Action asserts Bormann teaches a graphical user interface for simplifying maintenance of a system and which displays a representation of host processing systems that are logged into the system and login information, and that it would have been obvious for one of ordinary skill in the art to apply the teachings of Bormann to Chen because "it would have provided an improved interface for management of the system."

With respect to Jacoby, the Office Action asserts that Jacoby teaches a graphical method for monitoring and displaying connections to enable a user to visually monitor the network, and that it would have been obvious for one of ordinary skill in the art to apply the network management method of Jacoby to the storage system of Chen because it would have provided an "intuitive, easy to comprehend way to monitor the storage system." These rejections are respectfully traversed.

A. The Disclosure of Chen

Chen is directed to a system for providing access to a remote network wherein an internet appliance, such as a router, is allowed to access a portion of a mass storage device (Abstract, Col. 2, line 26-38). Because internet appliances typically lack memory to perform applications such as electronic mail (e-mail), Chen allocates a portion of internal mass storage in another system on the network, such as a workstation or file server, and maps the internal mass storage in the other system to the internet appliance (Col. 3, lines 6-16 and lines 57-65).

Figure 2 of Chen illustrates the establishment of a link between a mass storage device and the internet appliance (Col. 4, lines 56-58). The mass storage device 180 is given a name in step 240 and users of the mass storage device 180 are then defined in step 250. In step 250, internet appliance 110 is defined as a user, and a password required to access the mass storage device 180 is then provided via step 260 (Col. 5, lines 6-9). Because only identified users can access the mass storage device 180 and a password is required to be provided by the internet appliance 110 to access the mass storage device 180, the application residing in mass storage device 180 is secure (Col. 5, lines 9-13).

Figure 3 of Chen shows a method for accessing mass storage device 180 (Col. 5, lines 16-17). When the internet appliance 110, or another component of the network 100, attempts to access the mass storage device 180, then via step 310, the internet appliance 110 will search for the component (i.e., file server 120) with the proper identity as defined in step 230 (Col. 5, lines 17-21). In step 320, the internet appliance 110 then finds the appropriate folder in the file server 120 using the name of the mass storage device 180 provided in step 240 (Col. 5, lines 21-24). It is determined in step 330 whether the internet appliance 110 is a named user (Col. 5, lines 25-26). If the internet appliance is a named user, it must be determined if the password is correct, via step 340 (Col. 5, lines 28-30). If the correct password is not provided, access to the mass storage device 180 is denied, but if the password is correct, authorized users can access the mass storage device 180 (Col. 5, lines 30-34). Using the mass storage device 180, the internet appliance 110 provides applications (such as e-mail) to workstation A 130 through workstation E 170. (Col. 5, lines 35-40.)

In summary, Chen discloses an internet appliance 110, such as a router, that accesses folders of another system (i.e., file server 120) residing on a mass storage device 180 using a user name and password to support an application, such as e-mail, and provides that application to users of other systems (e.g., users of workstations A-E).

B. The Disclosure of Bormann

Bormann is directed to a graphical user interface (GUI) for a distributed switch having multiple operators. (Col. 1, lines 45-49.) Bormann discloses that traditional non-distributed network switches are maintained by maintenance technicians that are remotely located, and that typically, multiple maintenance technicians may be involved in performing maintenance simultaneously, thereby giving rise to potential interference between them. (Col. 1, lines 50-61.) These and other problems are exacerbated when the interaction is with distributed network switches (Col. 2, lines 48-60.) Accordingly, Bormann provides a graphical user interface for a distributed switch that permits operator identifiers and login information associated with operators to be received and displayed. (Col. 3, lines 26-34.) The operators may include human operators and computer operating systems, and the login information may include information about an operator's activities within the distributed switch. (Col. 3, line 35- col. 4, line 6.)

C. The Disclosure of Jacoby

Jacoby is directed to graphically displaying the network topology and information interchange activity occurring on a computer network. (Col. 1, lines 13-16.) Specifically, by scanning information packets passing across the network, and decoding the information packets to extract the source and destination address information, a database containing information relating to the topology of the network and information transfer activity occurring on the network is provided. (Col. 6, lines 29-47). Using that network database, a network monitor generates a graphical representation of the network topology and information transfer activity. (Col. 6, lines 47-50.)

D. The Combination of Chen and Bormann is Improper

There is no motivation to combine the teachings of Bormann with the internet appliance of Chen for the reasons asserted (or for any other reason).

Chen is directed to an internet appliance that provides an application, specifically an e-mail application, to users of a plurality of workstations. Once a link between the mass storage device 180 of the file server 120 and the internet appliance 110 is set up as shown in Fig. 2, users of the workstations A-E can access the storage on the mass storage device 180 through the internet appliance 110 for e-mail. (See col. 5, lines 35-40.) In this regard, Chen discloses a system in which centralized control of access to a portion of the mass storage device 180 residing on a file server 120 is provided via an internet appliance 110.

In contrast, the GUI described in Bormann is specifically adapted to a distributed switch in which various processors 120-123 are connected to a central hub 110 (see Fig. 1). Indeed, it is the distributed nature of the switch in Bormann that gives rise to the need for "additional coordination between technicians and individuals interacting with the distributed switch." (Col. 2, lines 47-60.)

One of ordinary skill in the art would not have been motivated to combine the teachings of Bormann with those of Chen, because the system of Chen is centralized, not distributed. All access to the mass storage device 180 in the file server 120 in Chen is via the internet appliance 110.

Furthermore, the asserted basis for the combination of Chen and Bormann (i.e., that it would have been obvious for one of ordinary skill in the art to apply the teachings of Bormann to Chen because "it would have provided an improved interface for management of the system") is completely lacking in Chen. Nowhere does Chen disclose, teach, or suggest that any type of management activity is required for the internet appliance 110 beyond the initial configuration and upgrading of the internet appliance itself. With respect to the initialization, Chen discloses that after performing the steps illustrated in the flow charts of Figs. 2 and 3, the internet appliance 110 can provide applications to workstation A 130 through workstation E 170. Upgrading of the internet appliance of Chen is simply achieved by "placing an upgrade file in a recognizable location," and then "rebooting" the internet appliance. (Col. 5, line 55- col. 6, line 6 and Fig. 4.) This is in contrast to the distributed switch of Bormann, wherein multiple maintenance technicians, multiple processors, multiple operating systems etc. are involved, and maintenance activity needs to be coordinated. (See col. 2, lines 48-60 and col. 7, lines 52-67.)

In summary, nowhere does Chen disclose, teach, or suggest that any management of the internet appliance is required beyond the initial setup and the potential upgrading of the internet appliance that is achieved in the manner illustrated in Figs. 2, 3, and 4. As such, one of ordinary skill in the art would not have been motivated to provide "an improved interface for management" of the system of Chen, because only a minimal level of management is even required. Further, because Chen is directed to an internet appliance that provides centralized access and control of an email application, and the internet appliance of Chen requires little to no management beyond that minimum amount of activity initially required, one of ordinary skill in the art would not have been motivated to combine the teachings of Chen and Bormann for any reason. Accordingly, the rejection of claims 1-61 under 35 U.S.C. §103(a) over the asserted combination of Chen and Bormann is improper and should be withdrawn.

E. Claims 1-61 Patentably Distinguish Over the Combination of Chen and Bormann

Even if the combination of Chen and Bormann under 35 U.S.C. §103(a) were proper, each of claims 1-61 patentably distinguishes over the asserted combination because the asserted combination does not identify each of the plurality of host processors that is logged into the

storage system as being logged into the storage system, as recited in each of independent claims 1 and 37.

Claim 1 is directed to a computer readable medium encoded with a program for execution on a computer system that includes a plurality of host processors coupled to a storage system over a network. The program, when executed on the computer system, performs a method comprising a step of displaying a first representation of each of the plurality of host processors that is logged into the storage system over the network, wherein the first representation identifies each of the plurality of host processors that is logged into the storage system as being logged into the storage system.

As described in Fig. 2 of Chen, the internet appliance 110 first establishes a link with the mass storage device 180 residing in the file server 120, with the internet appliance 110 being defined as a "user." (See step 250, and col. 5, lines 5-7.) When access is to be provided for one or more users of the workstations A-E, the internet appliance 110 provides its user name and password to gain access to the mass storage device 180 on the file server 120, and if the proper user name and password is provided, "authorized users" such as users of the workstations A-E "can then access the mass storage device 180." (Col. 5, lines 16-33.)

However, as explained at column 5, lines 35-40 of Chen, access to the mass storage device 180 on the file server 120 by workstations A-E is provided by the internet appliance 110. That is, once the internet appliance 110 has successfully provided its name and password to the file server 120, workstations A-E are provided with access to email application folders on the mass storage device 180, without the workstations A-E themselves ever having to log into the file server 120. Indeed, Chen does not even identify whether the workstations A-E need to log into the internet appliance 110 to be provided with such access. Thus, the storage system of Chen (i.e., the file server 120 with its mass storage device 180) is incapable of identifying whether any of the various workstations A-E is actually logged into the file server, as the only device that logs into the file server is the internet appliance 110 itself--all others access the mass storage device 180 via the internet appliance 110.

Further, the internet appliance is identified to the file server 120 as a "user" and not as a host processor as recited in Applicants' claim 1. Indeed, in the rejection of claim 1, the Office Action asserts that "Chen teaches a storage system that is assessble [sic] by a plurality of user[s]

over a network," and that "each user has access to [a] different portion of data on the storage device." As well known to those skilled in the art, a host processor may have a number of users, but those users are not necessarily host processors.

Accordingly, because the system of Chen is incapable of identifying each of a plurality of host processors that is logged into a storage system over a network as being logged into the storage system, then even if the graphical user interface of Bormann were combined with the system of Chen, claim 1 still patentably distinguishes thereover, as the combination would be incapable of graphically displaying information (i.e., which host processors are logged in) that it can not even identify. Accordingly, claim 1 patentably distinguishes over the combination of Chen and Bormann, and the rejection of claim 1 under 35 U.S.C. §103(a) based thereon should be withdrawn.

Claim 37 is directed to a method for use in a computer system having a plurality of host processors coupled to a storage system over a network. The method comprises a step of displaying, on a display in the computer system, a first representation of each of the plurality of host processors that is logged into the storage system over the network, wherein the first representation identifies each of the plurality of host processors that is logged into the storage system as being logged into the storage system.

As should be clear from the foregoing, the asserted combination of Chen and Bormann is incapable of displaying a first representation of each of a plurality of host processors that is logged into the storage system as being logged into the storage system, because the system of Chen cannot even identify which host processors are logged in. All the system of Chen could possibly identify is that the internet appliance itself is logged in, but it could not identify whether users of the workstations A-E were logged in, because access to the mass storage device by the workstations A-E is provided through the internet appliance. Thus, claim 37 patentably distinguishes over the combination of Chen and Bormann, and thus, the rejection of claim 37 under 35 U.S.C. §103(a) based thereon should be withdrawn.

Although the Office Action does not specifically indicate which of dependent claims 2-36 and 38-61 are asserted to be obvious over the combination of Chen, Bormann, and Jacoby, Applicants respectfully point out that the graphical representation provided by Jacoby is based upon scanning information packets passing across a network, and decoding the information

packets to extract the source and destination address information. (See col. 6, lines 29-56.) Thus, although Jacoby can identify the source and destination of an information packet, such information does not indicate whether or not one device is logged into another. Indeed, the information represented by Jocoby only identifies whether an information packet was sent, but does not indicate whether the information packet was even received at the destination address. Accordingly, because the graphical representation provided by Jacoby is incapable of identifying whether or not one device is logged into another, claims 2-36 and 38-61 patentably distinguish over the asserted combination of Chen and Bormann alone, or in combination with Jacoby.

2. Claims 62-85

With respect to the rejection of claims 62-85, the Office Action asserts that Fig. 2 and column 5, lines 5-15 of Chen discloses a method for changing access privileges to a portion of data on a storage system over a network. The Office Action concedes that Chen does not teach a graphical user interface for displaying and enabling modification of the privileges in response to a graphical selection, but asserts that the IBM TDB teaches a graphical user interface for security administration. The Office Action alleges that it would have been obvious for one of ordinary skill in the art to apply the teachings of the IBM TDB to Chen because it would have improved the system by allowing the user to administer the system from a graphical user interface and prevented the user from having to know or remember commands or syntax to accomplish the task.

As noted above, nowhere does Chen indicate that the amount of administrative activity necessary to manage the system of Chen (including the assignment or changing of access privileges) is other than minimal. Accordingly, Applicants respectfully assert that one of ordinary skill in the art would not have been motivated to combine the system of Chen with the graphical user interface for security administration of the IBM TDB, as the minimal amount of security administration in Chen doesn't warrant such an elaborate security administration interface.

Nonetheless, in an effort to further the prosecution of this application, Applicants have made several clarifying amendments to the claims and explain below how the amended claims

patentably distinguish over the combination of Chen and the IBM TDB, so that the rejection of claims 62-85 under 35 U.S.C. §103(a) over that combination should be withdrawn.

A. The Disclosure of the IBM TDB

The IBM TDB is directed to a graphical user interface (GUI) for a distributed computing environment, distributed security environment which will display all security objects with a known span of control for security administration purposes. (Page 1, first paragraph.) As described in the IBM TDB, security administration consists of setting up the various aspects of a distributed security service and involves the following object types: registry objects that contain user account, group, organization, and principal object containers; organization objects that provide a mechanism for partitioning the administration of a security registry database; group objects that allow the granting of an identical set of privileges to members of a group; principal objects that may be a machine or server identity and are the basic object upon which user accounts are constructed; and user account objects that are the unit of access to resource on machines in the distributed computing environment. (Page 1, paragraphs 2-9.)

B. Claims 62-85 Patentably Distinguish Over the Combination of Chen and the IBM TDB

Assuming that one of ordinary skill in the art would have been motivated to apply the teachings of the IBM TDB to Chen in the manner asserted, each of independent claims 62, 68, 74, and 80 patentably distinguishes over the asserted combination. This is because the asserted combination fails to disclose or suggest a step of modifying access privileges to a volume of data stored on a storage system by one of a plurality of host processors in response to a graphical selection of either (1) a graphical representation of the volume of data as recited in each of independent claims 62 and 68, or (2) a graphical representation of one of the plurality of host processors as recited in each of independent claims 74 and 80.

Chen teaches a technique whereby a device (i.e., the internet appliance 110) is provided access to an appropriate folder of a mass storage device 180 by logging in using a user name and password combination (Col. 5, lines 21-34).

1. Claims 62-67

By contrast, claim 62 is directed to a computer readable medium encoded with a program, that, when executed on a computer system that includes a plurality of host processors that are coupled to a storage system over a network, performs a method that includes a step of modifying access privileges to a volume of data stored on the storage system by one of a plurality of host processors in response to a graphical selection of a graphical representation of the volume of data.

Chen does not disclose, teach, or suggest modifying access privileges to a volume of data as recited in claim 62. Specifically, the file folders disclosed in Chen are not volumes of data.

The purpose of Chen is to provide an internet appliance with access to an application (such as e-mail). (Col. 6, lines 8-9). In particular, Chen teaches accessing a folder named virtual mailbox to provide e-mail capability to the internet appliance (Col. 5, lines 3-4). Chen's e-mail system, as other types of e-mail systems, does not access volumes; e-mail applications only access folders and files.

As discussed in related application serial no. 09/107,618 in response to a rejection over Chen, a folder, as is known in the art, is not functionally equivalent to a volume. Specifically, a folder is a named collection of related files that can be retrieved, moved, and otherwise manipulated as one entity, and is an organizational construct of a directory structure which is defined at a higher lever than a volume. A volume, on the other hand, is a logical grouping of disk storage devices that can be allocated to a device (e.g., a host) for storage space. One skilled in the art would not equate the terms volume and folder, as they are well-defined in the art as separate constructs. Accordingly, because the term volume is well understood in the art and distinguishes over the e-mail folders of Chen, and because Chen does not disclose or suggest managing access to a volume of data stored on a storage system, claim 62 patentably distinguishes over Chen.

Claim 62 similarly patentably distinguishes over the IBM TDB. Although the IBM TDB discloses a variety of different objects (registry objects, organization objects, group objects, principal objects, and user account objects) that may be graphically selected and acted upon, nowhere does the IBM TDB disclose, teach, or suggest that these objects may include a volume of data stored on a storage system. Accordingly, as neither Chen nor the IBM TDB discloses or

suggests modifying access privileges to a volume of data stored on a storage system as recited in claim 62, claim 62 patentably distinguishes over the asserted combination of Chen and the IBM TDB. Therefore, the rejection of claim 62 under 35 U.S.C. §103(a)over the combination of Chen and the IBM TDB should be withdrawn.

Claims 63-67 depend either directly or indirectly from claim 62 and patentably distinguish over the combination of Chen and the IBM TDB for at least the same reasons.

2. Claims 68-73

Claim 68 is directed to a method of managing access to data storage on a storage system from a plurality of host processors that are coupled to the storage system over a network. The method includes a step of modifying access privileges to a volume of data stored on the storage system by one of a plurality of host processors in response to a graphical selection of a graphical representation of the volume of the data. Claim 68 patentably distinguishes over the asserted combination of Chen and the IBM TDB for reasons similar to those discussed above with respect to claim 62. Specifically, neither reference discloses or suggests a step modifying access privileges to a volume of data stored in a storage system in the manner recited in claim 68.

Claims 69-73 depend either directly or indirectly from claim 68 and patentably distinguish over the combination of Chen and the IBM TDB for at least the same reasons.

3. Claims 74-79

Claim 74 is directed to a computer readable medium encoded with a program that, when executed on a computer system including a plurality of host processors that are coupled to a storage system over a network, performs a method. The method includes a step of modifying access privileges to a volume of data by one of the plurality of host processors in response to a graphical selection of the graphical representation of one of the plurality of host processors.

Neither Chen, the IBM TDB, nor the asserted combination of Chen and the IBM TDB discloses or suggests a step of modifying access privileges to a volume of data stored on a storage system in the manner recited in claim 74. Accordingly, claim 74 patentably distinguishes over the asserted combination of Chen and the IBM TDB, and thus, the rejection under 35 U.S.C. §103(a) based thereon should be withdrawn.

Claims 75-79 depend either directly or indirectly from claim 74 and patentably distinguish over the combination of Chen and the IBM TDB for at least the same reasons.

4. Claims 80-85

Claim 80 is directed to a method of managing access to data stored on a storage system from a plurality of host processors that are coupled to the storage system over a network, and recites a step of modifying access privileges to a volume of data in response to a graphical selection of a graphical representation of one of the plurality of host processors.

Claims 81-85 depend either directly or indirectly from claim 80 and patentably distinguish over the combination of Chen and the IBM TDB for at least the same reasons.

CONCLUSION

In view of the foregoing amendments and remarks, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes after this Amendment that the application is not in condition for allowance, the Examiner is requested to call Applicants' attorney at the number listed below to discuss any outstanding issues relating to allowability.

If this response is not considered timely filed, and if a request for an extension of time is otherwise absent, Applicants hereby request any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by the enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

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